



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,426	11/20/2001	Chun-Pu Hsu	MR2349-730	8566

4586 7590 08/12/2003

ROSENBERG, KLEIN & LEE
3458 ELLICOTT CENTER DRIVE-SUITE 101
ELLICOTT CITY, MD 21043

EXAMINER

NGUYEN, TRAN N

ART UNIT PAPER NUMBER

2834

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,426

Applicant(s)

HSU, CHUN-PU

Examiner

Tran N. Nguyen

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 1 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, “adapted to” is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

In claim 1, “a plurality of winding insulating plates adapted to be coupled to proximal ends of respective posts of said insulating stages *subsequent to the mounting of said windings on said posts*” and “coil *individually and separately wound and then subsequently mounted on said insulating stage*” are recitation of the method of forming the device, i.e., the assembling steps of the fabricating process of the stator. As for the structure claims of the stator, the stator is read to comprise all the recited elements with the corresponding structural interrelationships. These limitations are germane to the issue of patentability of the device. However, the method of forming the stator structure does not further limit the structure of the claimed stator, i.e., assembling steps of fabricating the stator, for example an element to be assembled subsequent to another element and/or an element is individually and separately formed with respect to other elements, are not germane to the issue of patentability of the device itself. (*In re Thorpe*, 227 USPQ 964, 966.)

In claim 7, “each of the stator teeth have a pair of closing rings” should be change to “each of the stator teeth has a pair of closing rings” for proper grammatical singular form (each ... has).

In claim 7, “wherein each of the stator teeth have a pair of closing rings respectively disposed on a topside and a bottom side thereof and having connecting ends for coupling to adjacent closing rings” is indefinite because it is unclear and appears not to recite the disclosed structure. According to figs 10A-10D, the stator structure having two closing annular rings, each stator tooth has a pair of closing ring portion (314) respectively disposed on a top side and a

Art Unit: 2834

bottom side thereof and having connecting ends (315) for coupling to adjacent closing ring portions of adjacent stator teeth. In light of the spec, this is the understanding of the above recitation.

Regarding the method claimed language of claim 7, “*stator teeth secured together in a closed contour for respectively receiving said plurality of insulation stages on said stator teeth combined with said closing rings and then receiving said windings on said insulating stages as a subassembly, said subassembly-being subsequently joined to said stator ring by respective coupling of said tooth tails with said embedding grooves*” the method recitations of subsequent steps of forming or assembling the stator components are not given any patentable weight because in the structure claimed invention, the final product with the recited elements and their corresponding structural interrelationships are germane to the issue of patentability of the device and are given patentable weight in the prosecution of the application. However, the method of forming the stator structure, i.e., assembling steps of fabricating the stator, for example an element to be assembled subsequent to another element and/or an element is individually and separately formed with respect to other elements, are not germane to the issue of patentability of the device itself. (*In re Thorpe*, 227 USPQ 964, 966.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forbes et al (US4712035) in view of Nitta et al (US 6265804) and Wendt et al (US4131693).

Forbes discloses an inner stator structure having a stator ring (35) and a plurality of stator teeth, each of the stator teeth having an insulating stage (figs 1-10). Forbes substantially discloses the claimed invention, except for the following limitations:

(a) the ring is divided into a plurality of units of equal size, each unit having a concave end and a convex end for assembling adjacent units into an annular ring, wherein the respective concave ends engaged with respective convex ends cannot be separated in a lateral direction.

(b) the winding is made of lacquered copper wires.

Regarding the limitations listed in subsection (a), Nitta teaches a motor with a stator ring (7) (figs 2, 10, 11) divided into a plurality of units of equal size, wherein each unit having a concave end and a convex ends (42a, 42b), i.e., dovetail connecting ends, for assembling adjacent stator units together, the configuration of the dovetail wedge concave and convex ends would obviously prevent the stator units from being separated in a lateral direction. Nitta teaches that the configuration of the stator units would reduce the iron loss since the stator ring is divided so that amounts of magnetic flux passing through the adjacent portions become the same; also, the divided core would enhance the mechanical stress tolerance so that deformation of the stator core would be minimized.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the Forbes' motor by embodying the stator structure being divided into a

Art Unit: 2834

plurality of units of equal size each unit having a concave end and a convex end for assembling adjacent units into an annular ring, wherein the respective concave ends engaged with respective convex ends cannot be separated in a lateral direction, as taught by Nitta. Doing so would enable the reduction of the iron loss therein and minimize mechanical deformation of the stator core.

Regarding the limitations listed in subsection (b), Wendt teaches that electrically insulated lacquered wire is widely used in the fields of electronics and telecommunication as well as in electric motors and transformers. This wire is formed with generally a copper (or aluminum) conductor surrounded by a thin but very elastic and heat resistant coat of synthetic resin.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the Forbes' motor by embodying the stator with lacquered copper wires as the stator winding, as taught by Wendt, because lacquered copper wires are widely used in the art.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable Forbes, Nitta and Wendt, as applied in the rejection against the base claim, and further in view of Horng (US 5859487).

The combination of **Forbes, Nitta and Wendt** refs substantially discloses the claimed invention, except for the added limitations as recited in claim 7.

Horng, however, teaches a stator having annular closing rings (30), each annular closing ring has a closing ring portions (31) and connecting ends (32) on both top and bottom sides thereof, and the connecting end (32) that integrally connecting the closing ring portions (31) to form the annular closing ring (fig 6). Horng teaches that the magnetic annular closing rings (30) which are disposed at respective above and below ends of the stator core (1) would increase in area of magnetic conduction to improve the horsepower of the motor. Horng discloses magnetic closing end rings; therefore, those skilled in the art would realize that the closing end rings must be isolated from the stator coils. To isolate these two components from one another, it would have been obvious to an artisan to provide insulator bobbins (which is recited as insulator stages) to cover the stator teeth and their closing ring portions from the winding provided around thereof.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the prior-art motor by embodying the closing rings on both top and bottom sides

Art Unit: 2834

thereof, and having connecting end that integrally connecting the closing rings, as taught by Horng. Doing so would provide means to enhance the stator's efficiency.

Regarding the method claimed language of claims 1 and 7, the method recitations of subsequent steps of forming or assembling the stator components are not given any patentable weight because in the structure claimed invention, the final product with the recited elements and their corresponding structural interrelationships are germane to the issue of patentability of the device and are given patentable weight in the prosecution of the application. However, the method of forming the stator structure, i.e., assembling steps of fabricating the stator, for example an element to be assembled subsequent to another element and/or an element is individually and separately formed with respect to other elements, are not germane to the issue of patentability of the device itself. (*In re Thorpe*, 227 USPQ 964, 966.)

Response to Arguments

Applicant's arguments filed 5/09/03 have been fully considered but they are not persuasive because of the following:

The applicant argues that the stator structure of Forbes having *each salient pole piece 57 carries a bobbin 69 on which a winding 67 is formed. The bobbin 69 includes a pair of spaced apart opposing flanges 75, 75A integrally formed thereon. Thus, the winding 67 must be wound onto the bobbin, rather than preformed and subsequently assembled thereto.* The applicant continues to raise the issues about method of forming the stator by arguing that *"an insulating stage can be installed on the stator tooth prior to the stator tooth engagement with the stator ring. By the structure of the insulating stage being joined to an insulating plate subsequent to the preformed winding being installed on the insulating stage"*

In response to this argument, Forbes discloses an inner stator structure, **as a final product**, having each of the stator teeth having an insulating stage wound with winding inserted into the stator ring (35) by engaging projection (65r) and groove (45r) thereof. As for the stator's elements and their interrelationship, Forbes does disclose the claimed stator "an assembled stator ring having a plurality of angularly spaced embedding grooves formed on in one of an inner or an outer side thereof, the embedding grooves having an equal pitch, and, a

Art Unit: 2834

plurality of stator teeth respectively engaged with the stator ring each of the stator teeth being formed with an arc-shaped tooth surface, each of the stator teeth having a tooth flank extending from the distal end to a tooth tail at an opposing end of the tooth, the tooth tail having a complementary contour to a contour of a respective the embedding groove such that the tooth tail firmly embedded into the embedding groove; the stator teeth respectively have a plurality of insulating stages (71) with windings wound around the posts thereof and a plurality of insulating plates (75, 75a of fig 5) being couple to the proximal ends of the respective posts of the insulating stage (71).”

Thus, the Forbes stator structure is read on the claimed stator as the final product having the recited stator components and their structural interrelationship. Again, as stated in the rejections above, the method recitations in claims 1 and 7 with subsequent steps of forming or assembling the stator components are not given any patentable weight because in the structure claimed invention, the final product with the recited elements and their corresponding structural interrelationships are germane to the issue of patentability of the device and are given patentable weight in the prosecution of the application. However, the method of forming the stator structure, i.e., assembling steps of fabricating the stator, for example an element to be assembled subsequent to another element and/or an element is individually and separately formed with respect to other elements, are not germane to the issue of patentability of the device itself. (*In re Thorpe*, 227 USPQ 964, 966.)

The applicant further argues that nowhere in the Nitta ref does the reference disclose or suggest an arrangement wherein the windings can be profound and then subsequently installed on the stator teeth by means of insulating stages and insulating plates, which are joined together subsequent to the windings being installed on the posts of the insulating stages.

The applicant is correct to point out the above. However, the Examiner's position is that the Nitta teaches the divided stator ring core with complementary wedge shaped convex and concave ends to connect divided stator ring portions together. Thus it would have been obvious to an artisan to apply this teaching in configuring the stator ring structure as in the claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

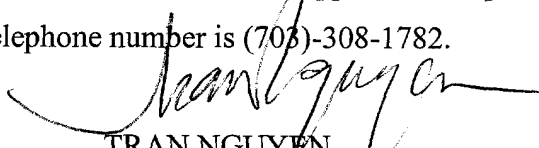
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tran N Nguyen whose telephone number is (703) 308-1639. The examiner can normally be reached on M-F 6:00AM-2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703)-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3431 for regular communications and (703)-395-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-1782.


TRAN NGUYEN
PRIMARY PATENT EXAMINER
TC 2800